

REMARKS

Claims 1-27 are pending in the subject application prior to entry of this Amendment. By the Amendment herewith, claims 1-9 and 19-27 are clarified to improve upon the wording by, for example, rearranging the wording of the claims, deleting abbreviations and "characterized in that" terminology, and also adding "configure to" terminology. The "data processing means" of claims 1, 6, 8, 9, 10, 15, 17 and 19 and "means" of claims 5, 7, 14 also are changed to "processor," as supported by page 22 of the specification. It is respectfully pointed out that the above formalities-related clarifications of the claims are not made for reasons related to patentability, and thus the full range of equivalents should remain intact.

New independent claim 28 also is added, as supported by page 22 of the specification. Claims 10-18 are cancelled without prejudice.

No new matter is introduced into the application as a result of the foregoing changes. Accordingly, upon entry of this Amendment, claims 1-9 and 19-28 are pending. Of those claims, claims 1, 19 and 28 are independent.

In the outstanding non-final Office Action, claims 1-10, 12, 14-19, 21, 26 and 27 are objected to as improperly including reference numerals in the claims. Claims 4-9, 13-18 and 22-25 also are objected to as improperly including multiple dependencies.

Applicant respectfully traverses the above objections and directs the Examiner's attention to the Preliminary Amendment filed with the subject application. In this Preliminary Amendment, the reference numerals and multiple dependencies were deleted from the claims. For the Examiner's convenience, attached in the Appendix is a copy of this Preliminary Amendment along with the postcard stamped by the USPTO acknowledging its receipt. Accordingly, reconsideration and removal of these objections is warranted.

Regarding the rejections based upon art, claims 1-2 are rejected under 35 USC Section 103(a) as being unpatentable over Park (Korean Patent Publication KR 1998-0085622, hereinafter "Park") in view of Yano (US Patent Publication 2003/0214712, hereinafter "Yano"). Dependent claim 3 is rejected under 35 USC Section 103(a) as being unpatentable over Park in view of Yano, as applied to claim 1 or claim 2, and further in view of Hamaguchi (US Patent 6,809,771, hereinafter "Hamaguchi"). Lastly, dependent claim 27 is rejected under 35 USC Section 103(a) as being unpatentable over Park, in view of Yano, and further in view of Johnson (US Patent 2,890,618, hereinafter "Johnson").

The foregoing rejections are respectfully disagreed with, and are traversed below.

Park discloses a balanced stereo camera and a method of controlling the distance between the image plane of a lens and camera body.

Yano discloses a multi-eye image sensing apparatus that has two camera sensing systems, and a signal processor that processes the image signals obtained by the camera sensing systems. The apparatus can switch the image sensing mode between a three-dimensional image sensing mode and panoramic mode.

In contrast to Park and Yano and in accordance with embodiments of the claimed invention, the turning of the camera units relative to each other is arranged to occur when the distance between the camera units CAM1, CAM2 is adjusted, for example, as in a synchronized manner.

Neither Park nor Yano discloses or suggests that the mutual position of camera units relative to each other may be altered to correspond to the imaging mode by turning the camera units and altering of the distance between the camera units.

As a result of the above feature, the end user is not required to carry out operations, such as, adjusting the image angle of the camera units. In addition, the alignment-angle-setting between the camera units, which is adjusted through the linear movement, facilitates selection of the imaging modes,

even without special motorized solutions (see Applicant's specification at page 19, last paragraph, page 21, lines 21-29, and Figure 11).

Accordingly, the above references do not disclose or suggest the recited features of "said camera means comprises at least two camera units, which mutual position is configured to be adjusted to correspond to a determined imaging mode and wherein the adjusting of the mutual position comprises turning of the camera units relative to each other by altering the mutual distance between the camera units, if the mutual position of the camera units do not correspond to the determined imaging mode," as set forth in Applicant's independent claim 1.

Similarly, the above references do not disclose or suggest the recited features of "wherein the adjusting of the mutual position comprises turning of the camera units relative to each other by altering the mutual distance between the camera units, if the mutual position of the camera units do not correspond to the determined imaging mode" as set forth in independent claim 19.

Nor are the recited features of "adjusting a mutual position of a camera means comprising at least two camera units to correspond to a determined imaging mode, and wherein the adjusting of the mutual position comprises turning of the camera units relative to each other by altering the mutual distance between the cameras units ..." as set forth in Applicant's independent claim 28 disclosed or suggested by the above references.

Moreover, there is no reason to combine and modify the teachings of Park and Yano in an attempt to arrive at the above subject matter recited in Applicant's independent claims.

Accordingly, for at least the above reasons, independent claims 1 and 19, as well as newly presented independent claim 28, are patentable in view of Yano and Park. Thus, the Examiner's rejection should be reconsidered and withdrawn.

As remaining claims 2-9 and 20-27 depend from an allowable independent claim, these claims also are patentable at least in view of their dependency from an allow-

able independent claim. For completion, it is noted that the addition of secondary references Hamaguchi and/or Johnson, does not cure the shortcomings of Yano and Park, and does not disclose or suggest Applicant's claimed subject matter set forth in the dependent claims, whether viewed alone or in combination with Yano and/or Park. For example, neither Hamaguchi nor Johnson, which were cited by the Examiner in the rejection of some of Applicant's dependent claims, discloses or suggests the recited features of independent claims 1, 19 and 28 set forth above. Accordingly, all pending claims are believed to be in condition for allowance.

Although a Notice of Allowance is believed to be warranted in view of this Amendment, should the Examiner disagree, Applicant respectfully points out that no final rejection should be issued in response to this Amendment because all claims were not substantively addressed in the outstanding Action. In particular, page 3 of the Action indicates that "claims 4-9, 13-18 and 22-25 are (sic) not been further treated on the merits." Out of previously pending claims 1-27, only claims 1, 2, 3 and 27 appear to be formally rejected with the Examiner's reasoning.

All issues having been addressed, the subject application is believed to be in condition for immediate allowance. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the outstanding objections and rejections. A Notice of Allowance is therefore earnestly solicited.

A call to the undersigned would be appreciated should the Examiner have any questions.

Respectfully submitted:

Christine Wilkes Beninati May 8, 2009
 Christine Wilkes Beninati Date
 Reg. No.: 37,967

Customer No.: 29683
 HARRINGTON & SMITH, PC
 4 Research Drive
 Shelton, CT 06484-6212
 Telephone: (203) 925-9400
 Facsimile: (203) 944-0245

Appendix begins at page 11-copy of preliminary amendment and stamped postcard

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

5.8.2009

Date

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J. S. Miller

Name of Person



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Certificate of Mailing X Form 446
Total Application pages pp References X
Description pp Certified Copy & Transmittal
Claims pp Preliminary Amendment X
Abstract pp Pet. & Fee for Extension of Time
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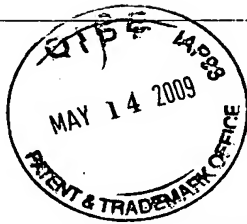
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In re U.S. Patent Application of:

APPLICANTS: Viinikanoja et al.
SERIAL NO.: to be assigned
FILING DATE: Herewith
EXAMINER:
ART UNIT:
DOCKET NO.: 887A.0029.U1(US)

TITLE: ELECTRONIC EQUIPMENT AND METHOD IN ELECTRONIC
EQUIPMENT FOR FORMING IMAGE INFORMATION, AND A
PROGRAM PRODUCT FOR IMPLEMENTATION OF THE METHOD

COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

PRELIMINARY AMENDMENT

Sir:

This Preliminary Amendment is herewith filed in conjunction with the filing of a new U.S. Patent Application. Any fee required as a result of this Preliminary Amendment is attached. However, should the undersigned attorney be mistaken or should there be a fee deficiency, please charge Deposit Account No. 50-1924 for the amount of the deficiency.

Please amend the application as shown below.

ABSTRACT AMENDMENT

Please amend the abstract as follows:

The invention relates to electronic equipment (10). The equipment (10) includes camera means (12) for forming data from an object located in the imaging direction, in which case the said camera means include at least two camera units (CAM1, CAM2) and data-processing means (11), which are arranged to process the data formed using the camera means, in a manner corresponding to the currently selected imaging mode, to form image information. In the equipment, the mutual position of the camera units (CAM1, CAM2) relative to each other is arranged to be altered to correspond to the current imaging mode.

IN THE CLAIMS

1. (Currently Amended) Electronic equipment (40), which includes
 - camera means (42) for forming data on an object located in the imaging direction, in which case the said camera means (42) include at least two camera units (CAM1, CAM2) which mutual distance (A) can be adjusted and which are arranged to be turnable relative to each other and
 - data processing means (44), which are arranged to process the data formed by the camera means (42), according to the currently chosen imaging mode of the equipment (40), in order to form image information andin the equipment (40), the mutual position of the camera units (CAM1, CAM2) relative to each other is arranged to be altered to correspond to the current imaging mode, characterized in that, the adjustment of the distance (A) between the camera units (CAM1, CAM2) is arranged to generate the turning of the camera units (CAM1, CAM2) relative to each other.
2. (Currently Amended) Equipment (40) according to Claim 1, characterized in that the mutual position of the camera units (CAM1, CAM2) relative to each other is arranged to be altered by the camera units (CAM1, CAM2) being manually moved by the user.
3. (Currently Amended) Equipment (40) according to Claim 1 or 2, which additionally includes a display component (49) arranged on one side of the equipment (40), characterized in that the camera units (CAM1, CAM2) are arranged on the opposite side of the equipment (40) relative to the display component (49).
4. (Currently Amended) Equipment (40) according to any of Claims 1 —3, characterized in that the camera units (CAM1, CAM2) are connected to each other.
5. (Currently Amended) Equipment (40) according to any of Claims 1 —4, characterized in that means (14, 15, 16.1 —16.4) are arranged in the equipment (40), for man-

aging the imaging modes and for processing data, in a manner according to the selected imaging mode.

6. (Currently Amended) Equipment (40) according to ~~any of~~ Claims 1 –6, characterized in that the data processing means (41, ~~16.1~~) are arranged to form 3D image information from the data formed using the camera units (CAM1, CAM2).

7. (Currently Amended) Equipment (40) according to Claim 6, characterized in that the equipment (40) includes means (~~16.3~~) for processing image errors.

8. (Currently Amended) Equipment (40) according to ~~any of~~ Claims 1 –7, characterized in that the data-processing means (41, ~~16.1~~) are arranged to combine the data formed using the camera units (CAM1, CAM2), at least partly to increase the resolution of the image information.

9. (Currently Amended) Equipment (40) according to ~~any of~~ Claims 1 –8, characterized in that the data-processing means (41, ~~16.2~~) are arranged to combine the data formed using the camera units (CAM1, CAM2), at least partly to permit a panorama-imaging mode.

10. (Currently Amended) System for forming image information, which includes

- camera means (42) for forming data on an object located in the imaging direction, in which case the said camera means (42) include at least two camera units (CAM1, CAM2) which mutual distance (A) can be adjusted and which are arranged to be turnable relative to each other and
- data processing means (41), which are arranged to process the data formed using the camera means (42), in a manner according to the currently selected imaging mode, in order to form image information and

in which the mutual position of the camera units (CAM1, CAM2) relative to each other is arranged to be altered to correspond to the current imaging mode, characterized in that, the adjustment of the distance (A) between the camera units (CAM1, CAM2) is arranged to generate the turning of the camera units (CAM1, CAM2) relative to each other.

11. (Original) System according to Claim 10, characterized in that the mutual position of the camera units (CAM1, CAM2) is arranged to be altered by the user manually moving the camera units (CAM1, CAM2).
12. (Currently Amended) System according to Claim 10 ~~or 11~~, which additionally includes a display component ~~(19)~~, characterized in that the camera units (CAM1, CAM2) are aimed in the opposite direction relative to the display component ~~(19)~~.
13. (Currently Amended) System according to ~~any of~~ Claims 10 —12, characterized in that the camera units (CAM1, CAM2) are connected to each other.
14. (Currently Amended) System according to ~~any of~~ Claims 10 —13, characterized in that the system includes means ~~(14, 15, 16.1—16.4)~~ for managing the imaging modes and for processing data in a manner according to the selected imaging mode.
15. (Currently Amended) System according to ~~any of~~ Claims 10 —14, characterized in that the data processing means ~~(11, 16.3)~~ are arranged to form 3D image information from the data formed using the camera units (CAM1, CAM2).
16. (Currently Amended) System according to Claim 15, characterized in that the system includes means ~~(14.1)~~ for processing image errors.
17. (Currently Amended) System according to ~~any of~~ Claims 10 —16, characterized in that the data processing means ~~(11, 16.1)~~ are arranged to combine the data formed using the camera units (CAM1, CAM2), at least partly to increase the resolution of the image information.
18. (Currently Amended) System according to ~~any of~~ Claims 10 —17, characterized in that the data processing means ~~(11, 16.2)~~ are arranged to combine the data formed using the camera units (CAM1, CAM2), at least partly to permit a panorama-imaging mode.

19. (Currently Amended) Method in electronic equipment (40) for forming image information, in which camera means (42) are used to perform imaging of an object in the imaging direction, which camera means (42) include at least two camera units (CAM1, CAM2) which mutual distance (A) can be adjusted and which can be turned relative to each other, the data formed by which is processed by processing means (44), in a manner according to the currently selected imaging mode, in order to form image information and in the method, the mutual position of the camera units (CAM1, CAM2) relative to each other is altered, to correspond to the current imaging mode, characterized in that, the camera units (CAM1, CAM2) are turned by adjusting the distance (A) between the camera units (CAM1, CAM2).

20. (Original) Method according to Claim 19, characterized in that, in the method, the mutual position of the camera units (CAM1, CAM2) relative to each other are altered by the user manually moving the camera units (CAM1, CAM2).

21. (Currently Amended) Method according to Claim 19 or 20, in which the equipment (40) additionally includes a display component (49) arranged one side, characterized in that the imaging is performed from the opposite side of the equipment (40) relative to the display component (49).

22. (Currently Amended) Method according to any of Claims 19 —21, characterized in that the imaging is performed to form 3D image information.

23. (Original) Method according to Claim 22, characterized in that the data are processed to process image errors.

24. (Currently Amended) Method according to any of Claims 19 —23, characterized in that the data are combined at least partly with each other to increase the image resolution.

25. (Currently Amended) Method according to any of Claims 19 —24, characterized in that the data are combined at least partly with each other to permit a panorama-imaging mode.

26. (Currently Amended) Camera module {12} for forming data from an object in the imaging direction, characterized in that the camera module {12} includes at least two camera units (CAM1, CAM2) aligned in the imaging direction, the mutual position of which relative to each other is functionally arranged to be altered to correspond to the selected imaging mode by adjusting the distance between the camera units (CAM1, CAM2).

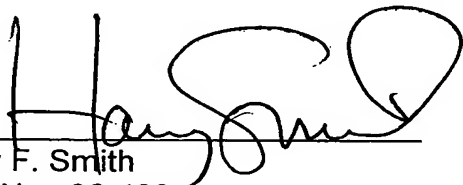
27. (Currently Amended) Camera module {12} according to Claim 26, characterized in that an index patterning {34} is arranged in the camera module {12}, to lock the distance between the camera units (CAM1, CAM2) to correspond to the imaging mode.

REMARKS

This amendment is based on the amended claims in the amended sheets found in the Annex to the International Preliminary Examination Report. The amendment removes the multiple dependencies and reference designations from the claims, and removes the reference designations from the abstract. The amendment was not made for reasons related to patentability, and the full range of equivalents for all of the elements of the amended claims, as well as for all of the other claims, should remain intact.

A favorable consideration that results in the allowance of all of the pending claims is earnestly solicited.

Respectfully submitted:



Harry F. Smith
Reg. No.: 32,493

Date

Customer No.: 29683

HARRINGTON & SMITH, LLP
4 Research Drive
Shelton, CT 06484-6212
Telephone: (203) 925-9400
Facsimile: (203) 944-0245